

IFW

Attorney Docket No. 5308-389

PATENT

THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Saxler

Confirmation No.: 8522

Application No.: 10/772,882

Group Art Unit: 2811

Filed: February 5, 2004

Examiner Name: Jerome Jackson, Jr.

For: NITRIDE HETEROJUNCTION TRANSISTORS HAVING CHARGE-TRANSFER  
INDUCED ENERGY BARRIERS AND METHODS OF FABRICATING THE  
SAME.

Date: June 30, 2004

Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**INFORMATION DISCLOSURE STATEMENT UNDER 37 C.F.R. § 1.97(b)**

Sir:

Attached is a list of documents on Form PTO-1449, together with a copy of any listed foreign patent document and/or non-patent literature. A copy of any listed U.S. patent and/or U.S. patent application publication is not provided herewith in accordance with the waiver by the U.S. Patent and Trademark Office of requirements under 37 C.F.R. § 1.98(a)(2)(i) for all U.S. national patent applications filed after June 30, 2003 and for all international applications that have entered the national stage under 35 USC § 371 after June 30, 2003.

It is requested that these documents be considered by the Examiner and officially made of record in accordance with the provisions of 37 C.F.R. § 1.56 and Section 609 of the MPEP.

No fee is believed due. However, the Commissioner is hereby authorized to charge any deficiency or credit any overpayment to Deposit Account No. 50-0220.

Respectfully submitted,

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Registration No. 48,568

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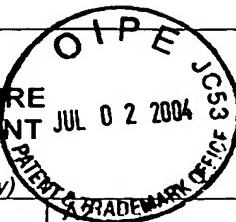
Erin A. Campion

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

JUL 02 2004

(use as many sheets as necessary)

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**Complete if Known**

Application Number	10/772,882
Filing Date	February 5, 2004
First Named Inventor	Saxler
Group Art Unit	2811
Examiner Name	Jerome Jackson, Jr.
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**U.S. PATENTS AND PATENT PUBLICATIONS**

Examiner Initials*	Cite No.	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY
		Number	Kind Code (if known)		
	1.	6,639,255		Inoue et al.	10-28-2003
	2.	6,586,781		Wu et al.	07-01-2003
	3.	6,448,648		Boos	09-10-2002
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	5.	5,946,547		Kim et al.	08-31-1999
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	8.	5,172,197		Nguyen et al.	12-15-1992
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	10.	4,778,156		Stoneham et al.	11-29-1988
	11.	2004/0066908		Saxler et al.	04-01-2004
	12.	2004/0029330		Hussain et al.	02-12-2004
	13.	2004/0021152		Nguyen et al.	02-05-2004
	14.	2003/0020092		Parikh et al.	01-30-2003
	15.	2002/0066908		Smith	04-15-2003

**FOREIGN PATENT DOCUMENTS**

Examiner Initials*	Cite No.	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	T
		Office	Number	Kind Code (if known)			
	16.	PCT	WO 93/23877 A1		Massachusetts Institute of Technology	11-25-1993	
	17.	PCT	WO 01/57929 A1		Cree Lighting Company	08-09-2001	
	18.	JP	10-050982		Nippon Telegraph & Telephone Corp.	02-20-1998	
	19.	EP	0 563 847 A2		Matsushita Electric Industrial Co., Ltd.	10-06-1993	

**OTHER NON PATENT LITERATURE DOCUMENTS**

Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T
	20.	Breitschadel et al., "Minimization of Leakage Current of Recessed Gate AlGaN/GaN HEMTs by Optimizing the Dry-Etching Process," <i>Journal of Electronic Materials</i> , Vol. 28, No. 12 (1999).	
	21.	Burm et al., "Recessed Gate GaN MODFETs," <i>Solid State Electronics</i> , Vol. 41, No. 2, pp. 247-50 (1997)	
	22.	Chen et al., "Reactive ion etching for gate recessing of AlGaN/GaN Field-effect transistors," <i>J. Vac. Sci. Technol. B</i> , Vol. 17, No. 6, (1999).	
	23.	Egawa et al., "Recessed gate AlGaN/GaN modulation-doped field-effect transistors on sapphire," <i>Applied Physics Letters</i> , Vol. 76, No. 1, pp. 121-23 (2000).	
	24.	Heikman et al., "Polarization Effects in AlGaN/GaN and GaN/AlGaN/GaN heterostructures," <i>Journal of Applied Physics</i> , Vol. 93, No. 12, pp. 10114-118 (2003).	
	25.	Heikman, Sten J., <i>MOCVD Growth Technologies for Applications in AlGaN/GaN High Electron Mobility Transistors</i> , Dissertation, University of California—Santa Barbara, 190 pages (2002).	
	26.	Karmalkar et al., "Enhancement of Breakdown Voltage in AlGaN/GaN High Electron Mobility Transistors Using a Field Plate," <i>IEEE Transactions on Electron Devices</i> , Vol. 48, No. 8 (2001).	
	27.	Karmalkar et al., "RESURF AlGaN/GaN HEMT for High Voltage Power Switching," <i>IEEE Electron Device Letters</i> , Vol. 22, No. 8, pp. 373-75 (2001).	
	28.	Kuzmik et al., "Annealing of Schottky contacts deposited on dry etched AlGaN/GaN," <i>Semiconductor Science and Technology</i> , Vol. 17, No. 11 (2002).	
	29.	Neuburger et al. "Design of GaN-based Field Effect Transistor Structures based on Doping Screening of Polarization Fields," WA 1.5, 7 <sup>th</sup> Wide-Bandgap III-Nitride Workshop, March 2002.	
	30.	Sriram et al., "RF Performance of AlGaN/GaN MODFET's on High Resistivity SiC Substrates," Presentation at Materials Research Society Fall Symposium, 1997.	
	31.	Sriram et al., "SiC and GaN Wide Bandgap Microwave Power Transistors," <i>IEEE Samoff Symposium</i> , March 18, 1998.	

Examiner Signature

Date Considered

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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	32.	Wu et al., "30-W/mm AlGaN/GaN HEMTs by Field Plate Optimization," <i>IEEE Electron Device Letters</i> (2004).	
	33.	United States Patent Application entitled, "Nitride-Based Transistors With a Protective Layer and a Low-Damage Recess and Methods of Fabrication Thereof," filed January 16, 2004 (Attorney Docket No. 5308-291).	

Examiner Signature

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